

The second side of the Pendulum Bob Adjuster Nut slot has now been machined along with the recess for a brass plate which is there to prevent wear caused by the brass nut rubbing against the Bob. On reflection, I suspect that this is overkill since the only time that any adjustment will be made, after initial set up, is when (if) the clock is moved to a different location - either Latitude or Altitude - and the Centre of Mass of the Pendulum needs to be changed due to the change in the value of gravity. The brass plates have also been cut to size and drilled for the Adjusting Screw to pass through. Fig-57 is the [Bob Assembly] with the adjusting Screw and Nut in place. The Pendulum Rod is not yet attached as I still want some freedom.



I now need to make a fixture to position the Bob ready to have the face 'Domed'. This will need to be a billet of Ash or Beech fixed to a Lathe face-plate, turned with a suitable size 'boss' in the centre and then that held in the Denford so that the precise size of a plug to fit the Adjusting Slot can be machined. Both sides of the Bob can be done using the same fixture as it will be supported by the tail-stock and a live centre. Before I do this, I can get on with making the [Frame Brace] as I've selected the material from a very nice piece of white Ash that is left over from a Presentation Case project. The blanks have been sized, had clamping holes drilled and the first one has been 'CNCed' - Fig-58 shows it on the Denford table alongside the piece of card I use under each component to try to minimise damage to the 'Sacrificial' table - It took me some time to make that with the 67 threaded inserts so I would sooner cut into the card than the table!

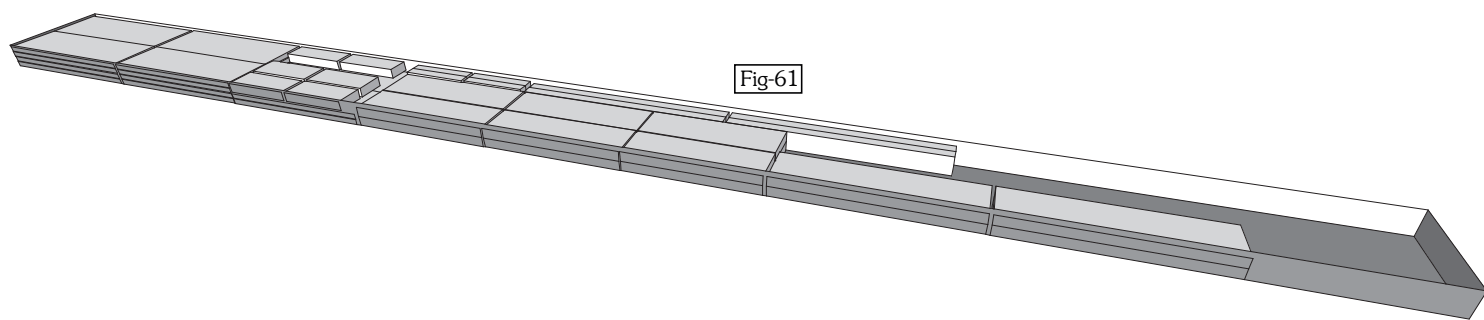
After I'd removed the waste part from the Brace, I realized that I could have also machined the other face to size

by surface skimming on the Denford as I had done the first face. To do that would need the other side to be counterbored to accommodate the clamping screw heads, just as the first side had been. It would also allow me to cut the other side of the tenon which fits into the [Frame A] part as well so the other three blanks were re-mounted on the milling machine to do just that. The result can be seen in Fig-59/60. In Fig-60 the face has had a clean up on the Linisher so that face will be down on the table for the first cuts which will enable me to clean up the face in Fig-59. After the shape has been cut out (kept in place by the 'Holding Tabs') the blank can be turned over - using different clamping holes - so that I can skim the 'cleaned' surface to size and cut the other side of the joint. I'll finish the first Brace to size on the linisher and mill the joint. Nothing about this component is really 'critical' and the only reason I'm doing it on the Denford is due to the shape.



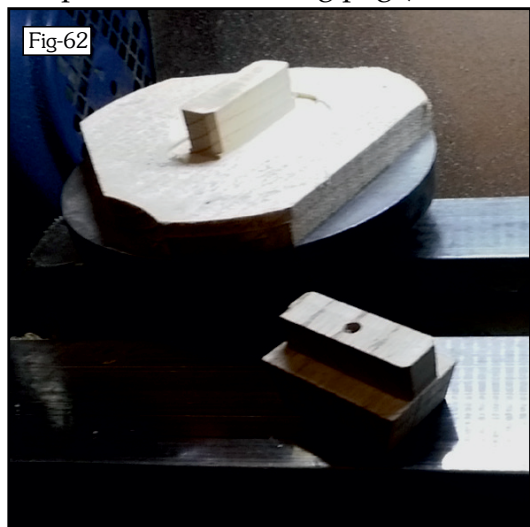
I've also worked out what Walnut I need for the rest of the Frame and Dial so I'm going to a couple of local(ish) wood-yards later this week to select a 2.1m board of 6" x 1½" which I'll have to 'slice and dice' into 50 pieces.

From Fig-61, you'll see that there will be some spare. I've had quotes from both but I want to see exactly what each are really offering. One is at £55 and the other is £80 for Grade A or £65 for Grade B. The fact that I paid nearly £70 for a 600mm long 4"Sq. piece about 6 months ago makes me think that the Grade A will be my best bet.





Waiting for the Denford to complete the work on the Frame Brace, I started looking at my options for Holding/Driving the Pendulum Bob to finish the face. I have a small (4"Ø) faceplate which will be plenty big enough but holding it on the Denford table with a sacrificial plate attached would be challenging since it is 28mm thick. I can get clamps on the bare plate so I could make space for the clamps by using a triangular block. A piece of scrap floor-board is perfectly good as the drive peg. First though I had to make a locating peg so that the face-plate could be clamped accurately and an oddment of Ash fitted that bill perfectly. It was a five minute job to first draw the position of locating peg (on the CNC Table) and in accurate register the oblong driving peg for the Bob and then create G-Code to do the work.



That would both position and drive the Bob but it would also need to be supported by the tail-stock since even a good tight fit would be insufficient to stop it wanting to creep off. Fig-62 has both drive and Tail-stock support on the lathe bed and Fig-63 is the Bob mounted on the spindle, supported by the tail-stock and with a tool-rest which I used to hand turn the face to the domed shape you can see in Fig-64.

It will have to be sanded to a fine finish and for that the tail-stock support will need to be removed but as I will be applying pressure towards the head-stock, that will stop any possibility of it wanting to come off the peg.



As predicted, I didn't have a problem sanding the faces so. because I skimmed the face by hand, I started with 80 grit then went through from 180g to 400g before using Sanding Sealer which was cut back with 600g and finished with MC Wax. I've only taken one of the four as far as the wax and even that is only one side so the driving fixture will be retained - it will always go back to the same place on the lathe spindle so I don't have an issue about de-mounting.

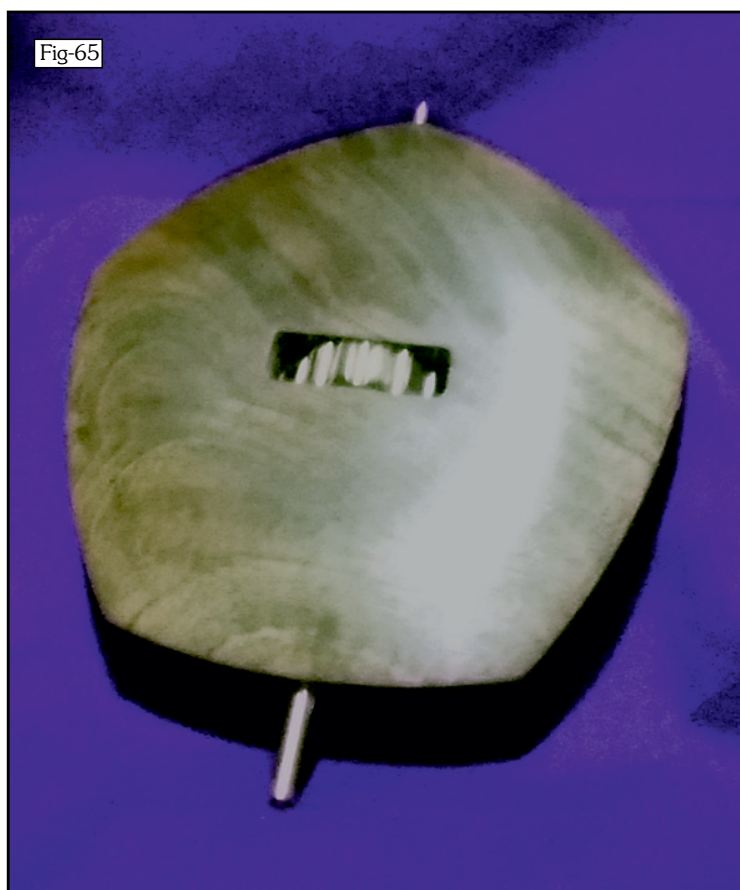


Fig-65 is the first Bob with one face 'finished' mounted on its Adjusting Screw and Nut. I say 'finished' but in reality I'll need to give it another coat of MC Wax and eventually it will be buffed just as the rest of the Walnut Frame and Dial will be.

Now I can return to the second stage of the Frame Brace which I put aside to make the drive fixture for the Bob so I report on the problems that I encounter doing that in the next installment.